

ABSTRACT OF THE DISCLOSURE

A new information embedding technology is disclosed using conjugate screen concept. More specifically, two screens are applied in a halftoning process, one for the areas that corresponds to the symbol to be embedded (object), and one for the background. Both screens can be conceptually decomposed into a two-layer structure similar to supercells. The top layer determines the overall halftone texture, while the bottom layer, which is conjugate for background and object, carries embedded data. The information can be retrieved digitally or optically. In embedding, there is no restriction of the symbol sizes. The computation is relatively simple and can be implemented in real time. In retrieval, it is relatively robust to registration errors.